AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (Original) A waveform equalizer that equalizes a waveform of a reproduction signal obtained by reproducing marks and non-marks recorded on a recording medium, comprising:

a delay element that delays a propagation of the reproduction signal;

a plurality of multipliers that multiply predetermined coefficients by the reproduction signal and said delayed propagation reproduction signal;

a detector that detects an asymmetry of the reproduction signal arising from physical profiles of each of the marks and the non-marks, said detector outputting a detection signal representing an amount of said asymmetry;

a discriminator that outputs a discrimination signal in response to a discrimination of the marks and the non-marks;

a calculator that calculates a first coefficient multiplied by the reproduction signal of the marks based on said outputted detection signal, said calculator calculating a second coefficient multiplied by the reproduction signal of the non-marks, which differs from the first coefficient; and

a selector that selects one of said first coefficient and said second coefficient, based upon said outputted discriminating signal.

2. (Original) The waveform equalizer of claim 1, wherein said waveform equalizer comprises a FIR filter, and wherein said selector changes said predetermined coefficients and changes equalization characteristics of the reproduction signal in the marks and non-marks.

3 (Currently Amended). A [[The]] waveform equalizer ~~of claim 1~~ that equalizes a waveform of a reproduction signal obtained by reproducing marks and non-marks recorded on a recording medium, comprising:

a delay element that delays a propagation of the reproduction signal;

a plurality of multipliers that multiply predetermined coefficients by the reproduction signal and said delayed propagation reproduction signal;

a detector that detects an asymmetry of the reproduction signal arising from physical profiles of each of the marks and the non-marks, said detector outputting a detection signal representing an amount of said asymmetry;

a discriminator that outputs a discrimination signal in response to a discrimination of the marks and the non-marks;

a calculator that calculates a first coefficient multiplied by the reproduction signal of the marks based on said outputted detection signal, said calculator calculating a second coefficient multiplied by the reproduction signal of the non-marks, which differs from the first coefficient; and

a selector that selects one of said first coefficient and said second coefficient, based upon said outputted discriminating signal, wherein a number of said

predetermined coefficients is odd, and wherein each of said first coefficient and said second coefficient selected by said selector is used as a center coefficient.

4. (Original) The waveform equalizer of claim 1, wherein an impulse response of said waveform equalizer is determined based upon said predetermined coefficients, and wherein each absolute value of said first coefficient and said second coefficient is greater than each absolute value of other predetermined coefficients.

5. (Original) The waveform equalizer of claim 1, wherein said waveform equalizer equalizes the waveform to have a predetermined impulse response characteristic.

6. (Original) The waveform equalizer of claim 5, wherein said predetermined impulse response characteristic comprises an impulse response having (a, b, b, a) characteristics.